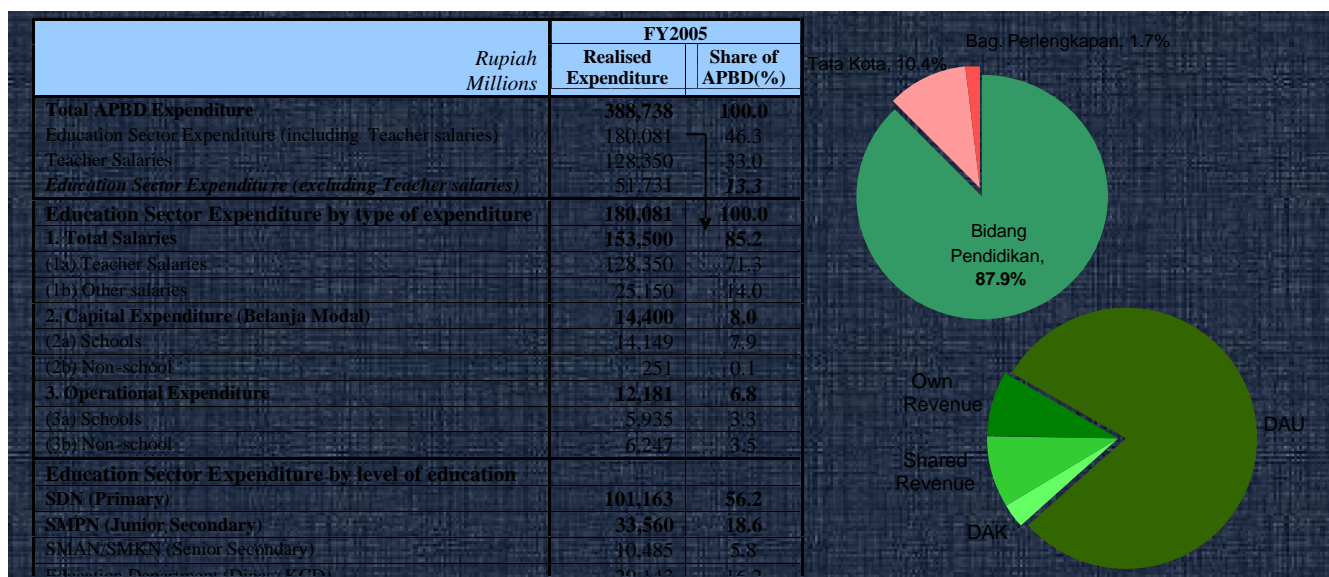




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## Decentralized Basic Education 1: Management and Governance

# District Education Finance Analysis



## DBE 1 Special Report

**October 2007**

This report is one of a series of special reports produced by RTI International, Implementing Partner for the USAID -funded Improved Quality of Decentralized Basic Education (IQDBE) program in Indonesia

# **More Effective Decentralized Education Management and Governance**

DBE1 Special Reports:  
District Education Finance Analysis

Contract 497-M-00-05-00029-00

Prepared for  
USAID/Indonesia

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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<sup>1</sup> RTI International is a trade name of Research Triangle Institute.

## Table of Contents

	Page
1. Introduction .....	1
2. DEFA Methodology and Implementation in Cohort 1 Districts .....	2
Progress in DEFA Implementation .....	5
3. DEFA Results Summary for Cohort 1 Districts .....	7
Step 1: Summarize APBD revenue and Expenditure .....	7
How is District Development Funded? .....	7
What is it spent on? .....	10
Step 2: Calculate total education sector expenditure and its share of APBD .....	10
Step 3: Disaggregate education sector expenditure by type of expenditure. ....	12
Step 4: Disaggregate education sector expenditure by level of education and calculate education expenditure per student. ....	14
4. Next Steps in DEFA Development .....	20
5. Summary of Findings .....	21
Appendix DEFA Methodology .....	22
Abbreviations and Terminology .....	27

# 1. Introduction

This report is the first out of a series of three and has as its purpose to report on progress in District Education Finance Analysis (DEFA) methodology development and implementation and to present initial DEFA results for cohort 1 districts. The next two reports will present DEFA results for cohort 1 and 2 districts (mid -2008) and cohort 2 and 3 districts (mid -2009) respectively.

The USAID Decentralized Basic Education (DBE -1) Project is assisting up to 100 district governments in improving their management and governance of the education sector. An important part of DBE's approach is to give districts the planning tools to successfully manage the provision of education services.

Education development planning should result in plans that can be realistically implemented. This can only be achieved when plans are prepared by taking account of financial resource constraints. DBE realized that critical financial information was missing to effectively support the education planning process and therefore developed District Education Finance Analysis (DEFA), which is a tool to get a more comprehensive picture of how education development is financed. It basically concerns condensing and reworking information contained in the very thick budget documents into information that is easy-to-understand and that provides a transparent and relevant picture of what the money is spent on. This will help:

- Improve decision making as decisions are based on analysis results
- Setting priorities among district development sectors and within the education sector (e.g. investments in early childhood development versus improved education at the secondary level)
- Assess whether funding is being allocated in a fair manner as DEFA provides information on per student expenditure by level of education
- Compare performance among districts which is an effective way of assessing individual district performance
- Assess to what extent the district has met its obligation under Law 20 of 2003 to spend a minimum of 20% of APBD on education, excluding teacher salaries
- Move toward a results orientation in which expenditures are matched to key education performance indicators
- Improve internal accountability by linking results to inputs which will help improve internal management
- Improve external accountability by widely disseminating results -to-inputs information in an easy-to-understand manner for use in public policy debate.

The report is structured as follows. Section 2 explains the methodology and the way in which it has been introduced in cohort 1 districts and identifies a number of lessons learnt to be used for program refinement. Section 3 provides a summary of initial DEFA results and initial conclusions on education sector financing. Section 4 identifies the next steps in DEFA program development. Section 5 presents a summary of major conclusions drawn from the DEFA analysis. The Appendix contains an outline of DEFA methodology. A list of terms and acronyms is attached at the end of the document.

## **2. DEFA Methodology and Implementation in Cohort 1 Districts**

The focus of DEFA is on public education provision, and consequently, the analysis is primarily being conducted on the basis of the most up-to-date district government budget documents (APBD Kab/Kota), which means either the budget, the mid-year budget revisions, or the budget realization documents. Figure 1 on the following page summarizes the steps in DEFA methodology. (See the Appendix for more detailed explanation of DEFA methodology.)

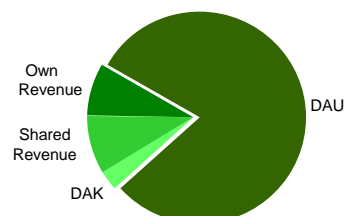
Districts receive most of their funding<sup>2</sup> in the form of annual block grants from the central government through mechanisms called General Allocation Fund (Dana Alokasi Umum [DAU]) for salaries and services and Special Allocation Fund (Dana Alokasi Khusus [DAK]) for centrally earmarked priorities and projects. In addition, districts receive “Shared Revenues” from the central government which is a partial of return of funds generated from taxes and the extraction of natural resources in the district. Districts also internally generate revenue (Own Source Revenue) from local taxes and fees; and in some cases they receive “Other Revenue” in the form of contributions from industries, for example, located in the district. A great deal of other education funding enters the district in the form of central and provincial allocations directly to schools or students; but this funding does not enter the district revenue budget accounts (see below).

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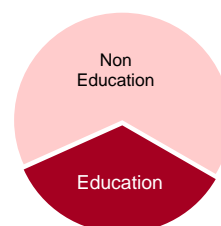
<sup>2</sup> For detailed description and analysis of education funding cf. “Study and Analysis Related to Education Governance and Finance”, DBE1 Special Report dated August 2007.

**Figure 1. DEFA Methodology <sup>3</sup>**

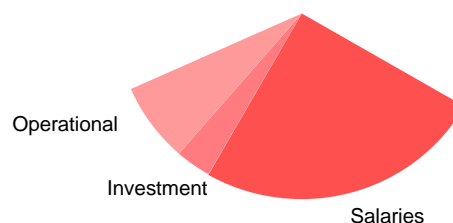
1. Summarize APBD revenue and expenditure



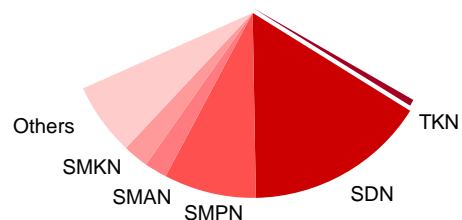
2. Calculate total education sector expenditure and its share of APBD



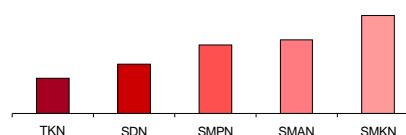
3. Disaggregate education sector expenditure by type of expenditure:
  - Salaries
  - Operational Expenditure
  - Investments



4. Disaggregate education sector expenditure by level of education



And calculate the education expenditure per student



<sup>3</sup> Illustrations are based on results of one DEFA district.

Step 2 is the key step in conducting DEFA analysis. To get a complete picture of total education sector expenditure it is necessary to review expenditure for the education sector (Bidang Pendidikan) as well as for other district development sectors. In particular, the budget for infrastructure development has to be carefully reviewed, as this sector often includes expenditure for school building construction and or rehabilitation. Further, the budget for general administration has to be reviewed as a number of education sector relevant allowances may have been included in this budget in a number of districts.

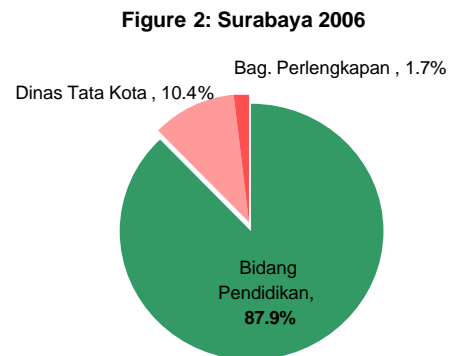
The extent of education related expenditure that is not being reported in the budget as education sector expenditure should not be underestimated as this would lead to serious under reporting. For instance, in Kota Surabaya, total education sector expenditure as calculated under DEFA included 12% from non-education sectors for FY 2006.

Once total education sector expenditure has been calculated, then this total will be expressed as a percentage of total APBD expenditure, which will help us to assess the importance of the sector relative to other district development sectors.

The next step in the methodology is to disaggregate total education sector expenditure, which will be done twice: first, by type of expenditure and second, by level of education. Finally, expenditure per student will be calculated by dividing total expenditure for each level of education by the number of students. Summarizing, DEFA provides easy -to-understand information on:

- district's dependency on higher level funding
- education sector size relative to the other district development sectors
- sector size by expressing total education sector expenditure as a percentage of total APBD expenditure
- education sector expenditure by type of expenditure
- the extent to which the district meets its obligation under Law 20 of 2003 education sector expenditure by level of education and per student.

This information will help the executive branch of government, the legislature, and civil society develop effective policies for education development. Table 1 presents a summary of a typical DEFA report.



**Table 1: Summary of DEFA Report for Kabupaten Karanganyar, 2005**

<i>Rupiah Millions</i>	FY2005	
	Realized Expenditure	Share of APBD(%)
<b>Total APBD Expenditure</b>	<b>388,738</b>	<b>100.0</b>
Education Sector Expenditure (including Teacher salaries)	180,081	46.3
Teacher Salaries	128,350	33.0
<i>Education Sector Expenditure (excluding Teacher salaries)</i>	51,731	13.3
<b>Education Sector Expenditure by type of expenditure</b>	<b>180,081</b>	<b>100.0</b>
<b>1. Total Salaries</b>	<b>153,500</b>	<b>85.2</b>
(1a) Teacher Salaries	128,350	71.3
(1b) Other salaries	25,150	14.0
<b>2. Capital Expenditure (Belanja Modal)</b>	<b>14,400</b>	<b>8.0</b>
(2a) Schools	14,149	7.9
(2b) Non-school	251	0.1
<b>3. Operational Expenditure</b>	<b>12,181</b>	<b>6.8</b>
(3a) Schools	5,935	3.3
(3b) Non-school	6,247	3.5
<b>Education Sector Expenditure by level of education</b>		
<b>SDN (Primary)</b>	<b>101,163</b>	<b>56.2</b>
<b>SMPN (Junior Secondary)</b>	<b>33,560</b>	<b>18.6</b>
SMAN/SMKN (Senior Secondary)	10,485	5.8
Education Department (Dinas+KCD)	29,143	16.2
Other (not included above)	5,730	3.2
<b>Education Expenditure per student per annum</b>	<b>Students</b>	<b>Rp/student</b>
<b>SDN (n=486)</b>	<b>75,644</b>	<b>1,337,352</b>
<b>SMPN (n=49)</b>	<b>28,890</b>	<b>1,161,658</b>
SMAN (n=12)	8,143	1,092,192
SMKN (n=2)	1,375	1,157,373
<b>Operational Expenditure per student per annum</b>	<b>Expenditure</b>	<b>Rp/student</b>
<b>SDN (n=486)</b>	5,422,558,081	<b>71,685</b>
<b>SMPN (n=49)</b>	2,296,741,075	<b>79,500</b>
SMAN (n=12)	728,032,604	89,406
SMKN (n=2)	106,582,964	77,515

*n=number of schools*

## ***Progress in DEFA Implementation***

DEFA was developed by DBE1 national staff in 2005, the backbone of which is a series of linked Excel spreadsheets (see Appendix for details). A special manual was prepared explaining the methodology that was used in the training of DBE1 provincial staff in July and October 2006. In 27 Cohort 1 districts (including Aceh), DEFA was completed primarily in 2006, with a few finalized in early 2007. DEFA is also almost completed in three districts in West Papua as part of a USAID -BP public private alliance, namely for Kota Sorong, Kab Sorong Selatan, and Kab Manokwari.



**Table 2: DEFA's Completion in Cohort 1 DBE Districts <sup>4</sup>**

Province	Kabupaten (18)	Kota (9)
Aceh	Aceh Besar	Banda Aceh
North Sumatra	Tapanuli Utara, Deli Serdang	Sibolga, Tebing Tinggi, Binjai
Banten	Lebak	Tangerang, Cilegon
West Java	Sukabumi, Karawang, Indramayu	
Central Java	Karanganyar, Kudus, Boyolali, Jepara	
East Java	Sidoarjo, Tuban, Bangkalan	Mojokerto, Surabaya
South Sulawesi	Jeneponto, Pangkajene Kepulauan, Soppeng, Enrekang	Palopo

As explained earlier, DEFA requires availability of district government budget documents plus other supporting data. Experience in the field has shown that obtaining these documents has not always been an easy task and has required tactful intervention. On average, it took around one person-month to complete a DEFA report for one district, depending on the availability of all necessary documents. In some instances it took up to three months if information was not readily available. DEFA implementation in cohort 1 districts was basically a pilot, and therefore, the analyses were conducted by DBE1 staff with limited involvement of district staff. As DBE1 has now extensive experience, the delivery method will be changed from a DBE1 staff-led exercise to a model focusing on developing the capacity of district staff to conduct financial analysis of the education sector.

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<sup>4</sup> As of October 2007, DEFA in Klaten, Central Java, and 3 districts in West Papua were still being finalized.

### 3. DEFA Results Summary for Cohort 1 Districts

This section presents key results of the financial analysis conducted in 27 districts and attempts to summarize the findings. The section is structured on the basis of the steps in conducting the DEFA analysis. Data for the following analyses are missing in some districts because the methodology was being revised and perfected as the DEFA was carried out. In some cases, district reports were finalized before subsequent analysis was required.

#### **Step 1: Summarize APBD Revenue and Expenditure**

To get a clear picture of education financing, it is necessary to first get an idea of the size of the budget (APBD) managed by the district. To help the reader, APBD size is expressed both in billion rupiah and in millions US Dollars.

**Table 3: APBD Size in Rp billion and USD million for 2005**

APBD Size (Rp billion)	APBD (USD million)	Number of Districts	%
< 209	23.2	6	22.2
209 – 504	23.3 – 56	14	51.9
505 – 799	56.1 – 88.7	6	22.2
>=800	> 88.7	1	3.7
Total		27	100

*Exchange rate: 1 US\$ = Rp 9,000*

The average APBD is Rp 412 billion (USD 46 million). Kota Sibolga has the lowest APBD among DEFA districts of Rp 156 billion (USD 18 million), and Kota Surabaya by far the largest APBD of Rp 1,627 billion (USD 180 million).

#### **How is District Development Funded?**

##### Education Sector Funding through District Government Sources

Here we look at the following main sources of funding: Own Source Revenue, DAU, DAK, Shared Revenue, Other Revenue, and Provincial Grants. As the majority of local taxes are urban based, two different figures have been prepared: the first one (Figure 3) showing funding pattern for kabupaten and the second one (Figure 4) for kota.

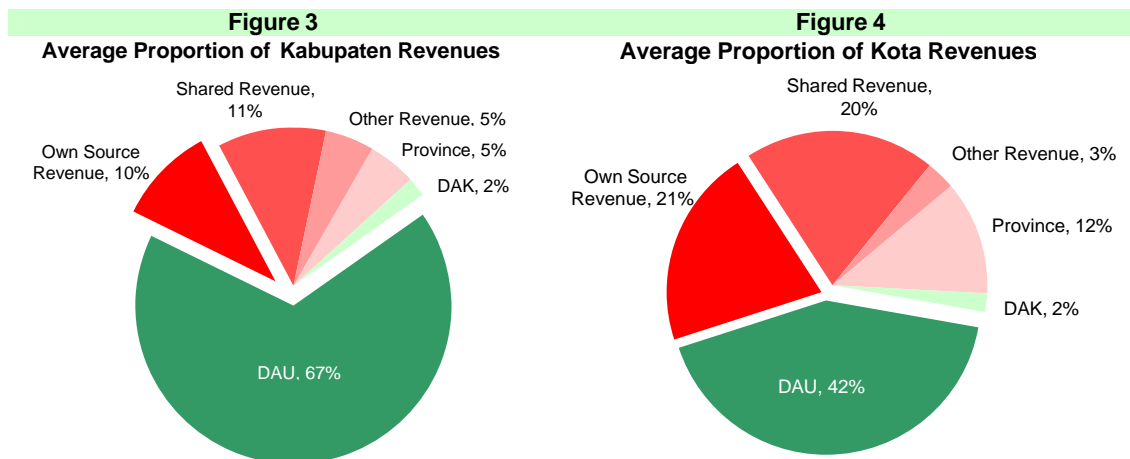
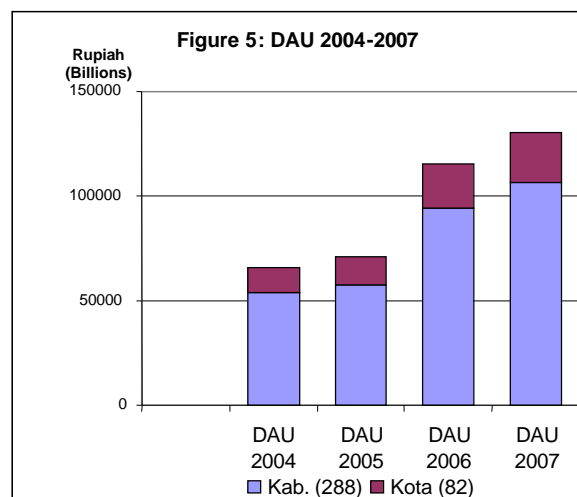


Figure 3 clearly shows the high level of kabupaten dependency on funding from the central level of government with DAK representing 67% of kabupaten revenue. This percentage is considerably lower for urban areas where DAK revenue represents 42% of total revenue. The share of Own -Source Revenue is another significant difference between kabupaten and kota. The share in kabupaten is 10%, and in urban areas more than double at 21%. DAK is linked to district revenue capacity, poverty levels, and district civil service salaries. In 2006, a new government regulation was issued (Presidential Instruction [Peraturan Presiden] No. 104/2006) redefining the way in which the block grant is being calculated. A major change is that under the new regulation, 100% of personnel cost is included in the DAK, which was 50% under the old regulation. This has resulted in a substantial increase in the DAK amount received by the districts (64% increase from 2005 to 2006). Figure 5 shows increases in DAK for the period 2004–2007. In future analysis, it will be interesting to know whether the increase in DAK has resulted in an equal increase in education expenditure or in other words, whether the education share of total expenditure has remained constant or has increased or decreased. The answer to this question is an indication of local priorities and would be of considerable public interest.



#### Education Sector Funding through Provincial and Central Government Sources

In its current form, the district government budget has been the primary DEFA focus. However, education development in districts is funded from a variety of sources other than through districts' APBD, including provincial APBD, which is the province's own discretionary budget under decentralization laws, and through budgets of the national

ministry (MONE) that are implemented by provincial governments through a mechanism called Deconcentration Funding (Dana Dekonsentrasi). The funds from these budget sources are expended by the provincial government to implement centrally defined programs and projects. Examples include block grants directly to schools to purchase text books, scholarships to students, special teacher training programs. In addition, the central ministries (MONE and MORA) also channel funds directly to schools. The largest of the directly funded central programs is called Bantuan Operasi Sekolah (BOS) (School Operational Funds), which are grants based on school enrollments made directly to schools by the central ministries MONE and MORA. Importantly, all these funds do not flow through the district budgets, and the extent to which districts participate in implementation decisions or even are fully aware of these programs varies widely.<sup>5</sup>

To get a more complete picture of the education sector funding, DBE1 is currently widening the DEFA scope to also include an analysis of the above mentioned sources of funding; some preparatory work has commenced in West Java Province. Initial results in West Java show that total education sector expenditure from provincial APBD and central ministry sources through the Dana Dekonsentrasi mechanism in West Java Province is on average Rp 102 billion per district, which is broken down as follows: Rp 74 billion under the central ministry's BOS program, Rp 26 billion under various deconcentration programs, and Rp 2 billion from provincial APBD. DEFA analysis has shown that average non-salary education expenditure from districts' APBD is around Rp 22 billion per district. By combining these two pieces of information, the following picture of district education sector financing evolves.

**Table 4: Education Sector Funding Sources**

<b>Funding Source</b>	<b>Amount (Rp billion)</b>	<b>%</b>
Provincial APBD	2	2
Dana Dekonsentrasi	26	21
BOS	74	60
District APBD	22	18
<b>Total</b>	<b>124</b>	<b>100</b>

**Table 4 shows that the district government is a relatively small player in education sector development as it only funds only 18% of total education sector non -salary expenditure.** This suggests that there is a disconnection between district responsibilities under Law 20 of 2003, which places responsibility for education management upon the districts, and the financial resources available at the district level. It looks a bit like the following: the district pays the salaries of the teachers and the higher levels of government finance education sector development. The education sector financing pattern also has major implications for education planning as districts must attune their plans to plans made by higher levels of government—in particular to the plans of central government—as well as to the school development plans prepared at the school level. It

<sup>5</sup> See also "Study and Analysis Related to Education Governance and Finance," DBE1 Special Report dated August 2007.

should, however, be kept in mind that the above analysis concerns a first and rough analysis and that more follow-up work remains to be done.

### **What is it spent on?**

Education is the largest district government sector in 12 out of the 27 districts for which data are available. Average education spending is 37.9% of total APBD.<sup>6</sup> General Administration is 28.3%, Public Health 8.7%, Public Works 13.1%, and Other Sectors 11.9%. The dominance of the education sector at the district level can hardly be overestimated, as the education sector's share of APBD is larger than the Public Health, Public Works, and Other Sectors combined. If we then keep in mind that around two thirds of all district staff, mostly teachers, work in the education sector, it makes a lot of sense to put efforts in improving the management and governance of the districts' largest sector.

### **Step 2: Calculate Total Education Sector Expenditure and Its Share of APBD**

As explained in Section 2 on methodology, a key feature of DEFA is to identify total education sector expenditure and not only the expenditure reported under the heading, Education Sector (Bidang Pendidikan). In particular, the budgets for the Public Works and General Administration sectors have to be carefully scrutinized as they may contain major education related expenditure.

**Table 5: Education Expenditures as a Percentage of APBD**

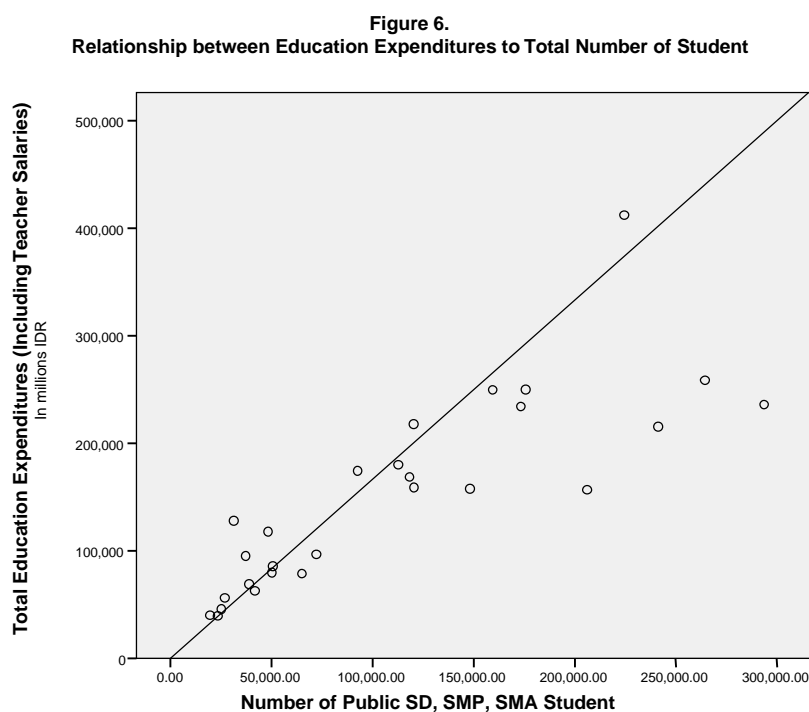
Education Sector Expenditure	Number of Districts	%
• less than 30 % of APBD	5	18.5
• 30% – 35% of APBD	5	18.5
• 35% – 40% of APBD	6	22.2
• 40% – 45% of APBD	6	22.2
• more than 45% of APBD	5	18.5
Total	27	100

On average, 36.7% of APBD in DEFA districts is allocated to the education sector, ranging from 20% in Kota Mojokerto to 47.8% in Kab Boyolali. From the above table, it can be seen that almost two thirds of the districts allocate over 30% of APBD to the education sector, or one third of the districts allocate more than 40%. Data analysis clearly shows that there is a major difference between urban areas with relatively small education delivery systems and rural areas with large systems. The former group includes Kota Cilegon (29.8% share of APBD for education), Kota Palopo (26%), Kota Sibolga

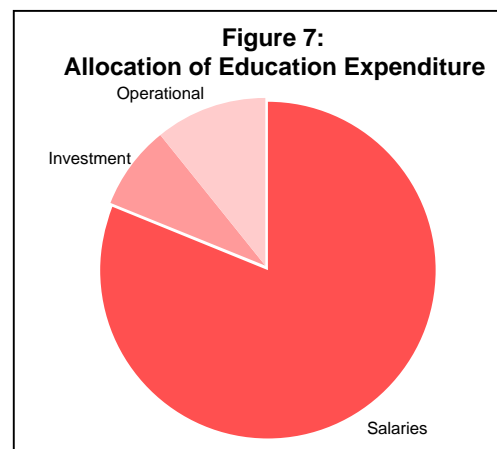
<sup>6</sup> Data used here are data shown in APBD under the heading Bidang Pendidikan and not total education sector expenditure as calculated under DEFA, which includes education relevant expenditure included in other development sectors. This analysis is for illustrative purposes. If actual DEFA analysis was used, the proportion of education would be even higher.

(25%), Kota Mojokerto (20%), and Kota Surabaya (25%). On the other side of the spectrum we find the rural districts with large numbers of children in school, namely Kab Boyolali (47.8% share of APBD for education), Kab Karanganyar (46.3%), Kab upaten Deli Serdang (46.9%), and Kab Sukabumi (45.0%). Kota Banda Aceh forms the exception, with a share of 46.9% of APBD, which is caused by extensive school reconstruction work after the tsunami in December 2004.

The following scatter diagram shows the relationship between Education Expenditure and the size of the education delivery system. Not surprisingly, the diagram shows that Education Expenditure increases when more children are in school. But the diagram also shows an economy of scale tendency because the increase in Education Expenditure gradually becomes smaller when the system becomes larger.



The diagram above demonstrates how the ratio of Education Expenditure to student size decreases or flattens out as the size of the education sector in a district increases. This is explained in part by the fact that in low student population districts fixed costs and fixed assets serve few numbers of students, which results in more expensive and, in some cases, less efficient systems in the smaller population districts. For example, the expenditure for a 6-classroom building with nine teachers serving 100 students is about the same as the same school serving 200 students.



While efficiency is desirable, efficiency must be balanced with the need to maintain or improve quality. While a student teacher ratio of 30:1 is efficient and desirable, a ratio of 50:1 would likely result in quality deterioration. (See further discussion of Student - Teacher Ratios on page 16 below.)

### **Step 3: Disaggregate Education Sector Expenditure by Type of Expenditure.**

The main purpose of this step is to see whether there is adequate funding for non -salary costs, particularly books, stationery, pedagogical materials, and school -based research. The ratio of salary to total education sector expenditure is used for this purpose. The following figure shows that on average, about 80% of total expenditure is on salaries, 8% on operational expenditure, and 12% on investment.

Further analysis, however, shows that these percentages should be used with care, as there are wide differences between urban and rural districts.

**Table 6: Ratio of Salary Expenditure to Total Education Sector Expenditure**

Rural Districts		Urban Districts	
Ratio	Number of District	Ratio	Number of District
> 90%	4	> 80%	1
85% – 90%	7	70% – 79%	3
80% – 84%	3	60% – 69%	4
< 80%	1	< 60%	1
Total	15	Total	9

The four rural districts with a ratio of over 90% will have serious difficulties in providing the schools with the necessary financial support. Basically the schools are there, the children and the teachers are there, but the teaching -learning process is inadequately supported by instructional materials unless there is additional support from higher levels of government (national - and provincial-level funding sources). For three out of the four districts, the high ratio is caused by low student -teacher ratios (STR) at the primary level (grades 1-6)<sup>7</sup> or, in other words, there are too many teachers. The STR for Kab Soppeng is extremely low, at 13.9 children per teacher. Not surprisingly, average school size is also very low with 104 children per school, and as a result, education is a very expensive sector in this district. This is clearly illustrated by the high expenditure per SD child — slightly over Rp 1.9 million per child, which is more than double the amount spent by other districts. Undoubtedly, low population densities constitute the main cause for the high per-child expenditure levels; but, yet, the district should find ways to increase the efficiency of the education system by merging small schools and or introducing multi -grade teaching.

<sup>7</sup> National Minimum Service Standards call for a STR of 30 -40 per class at the primary level.

The STRs for Kab Boyolali and Kab Deli Serdang are on the low side at 17.5 and 19 children per teacher respectively. Average school size in Kab Boyolali is low (144 children) and high in Deli Serdang high (226). In particular for the latter district, the data seem to suggest that there is a substantial teacher surplus as average school size is high, but average STR is relatively low. It is clear that teacher efficiency should be increased in the district. Kab Indramayu is the exception with a high STR of 29.7 children per teacher. As salaries represent 92% of total education sector expenditure, proper school funding can only be achieved by increasing the amount allocated to the education sector.

To determine the extent to which the district meets the 20% requirement under Law 20 of 2003, it is necessary to subdivide total salaries into teacher salaries and non -teacher salaries. When we do this, the salary share of the total education sector expenditure drops from 80% to 69%, and the distribution now looks as follows:

**Table 7: Teacher Salaries as a percentage of Education Expenditure**

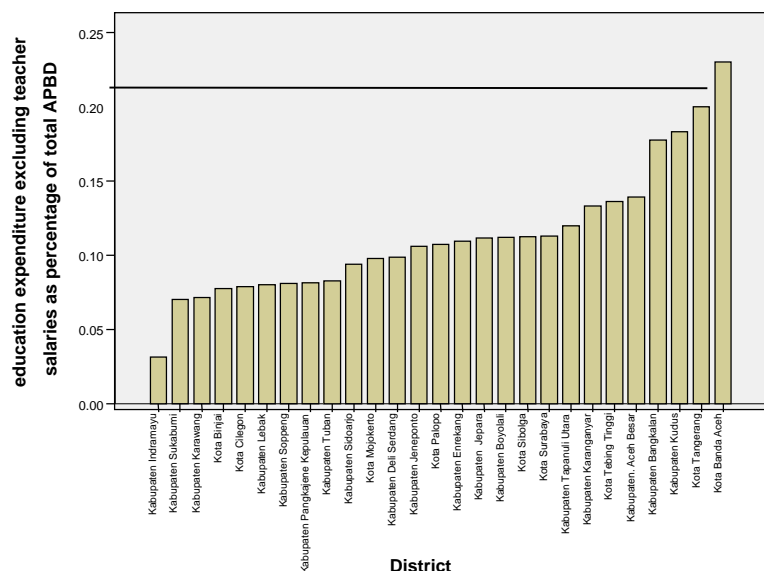
Education Sector Expenditure	Number of Districts	%
• less than 50 %	1	3.8
• 50% – 60%	7	26.9
• 65% – 70%	3	11.5
• 70% – 80%	10	38.5
• more than 80%	5	19.3
Total	26	100

In the seven urban areas in the sample above, the teacher salary share of total education sector expenditure is relatively low—in the range from 46% in Kota Tangerang to 59% in Kota Palopo. The picture becomes again completely different for the rural districts with large education delivery systems where teacher salaries represent more than 80% of total education sector expenditure: Kab Lebak (81%), Kab Karawang (81%), Kab Sukabumi (84%), and Kab Indramayu (92%). Kab Soppeng is again the exception, with an 80% teacher salary share in spite of the fact that the district only has a small education system.

To determine the extent to which the 20% requirement under Law 20 of 2003 is met, teacher salaries should be subtracted from total education sector expenditure and then the balance expressed as percentage of APBD. This leads to the following result.



**Figure 8: Percentage of Education Expenditure, Excluding Teacher Salary to Total APBD by District**



When teacher salaries expenditure is excluded from education sector expenditure, DEFA reports in **Figure 8** that none of the DEFA districts have achieved the “20% Requirement,” excepting Kota Banda Aceh, which is a special case because of the effects of the tsunami and post tsunami reconstruction efforts. Kota Tangerang is close to achieving the target because it is a wealthy district located close to Jakarta, where the district government has placed a high priority of education spending. On the other side, Kabupaten Indramayu is a relatively poor rural district in West Java province with an extremely large student population and few natural resources.

#### ***Step 4: Disaggregate Education Sector Expenditure by Level of Education and Calculated Education Expenditure per Student.***

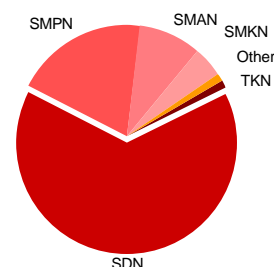
Education at the primary level (grades 1 –6) represents on average 57% of total education, SMPN (grades 7–9) 17%, SMA (grades 10–12) 8% and SMKN (grades 10–12) 4%. Now we look in more detail into the public primary education sector.

**Table 8: Primary Education Expenditure to Total Education Sector Expenditure**

Primary Education Expenditure	Number of Districts	%
• less than 40 %	2	9.1
• 40% – 50%	4	18.2
• 55% – 60%	8	36.5
• 60% – 70%	5	22.7
• more than 70%	3	13.5
Total	22	100

Table 7 shows that over 70% of the sample DEFA districts spend more than 50% of total education sector expenditure on primary education. This ratio goes down to 35% of the districts when we look at the districts spending more than 60% of total education expenditure on primary education. There are three districts that spend more than 70% of total education sector expenditure on SDN. Not surprisingly, these are districts with large education delivery systems, i.e., Kabupaten Su kabumi (70%), Kabupaten Lebak (73%) and Kabupaten Indramayu (83%).

**Figure 9: Education Expenditure by Level of Education**

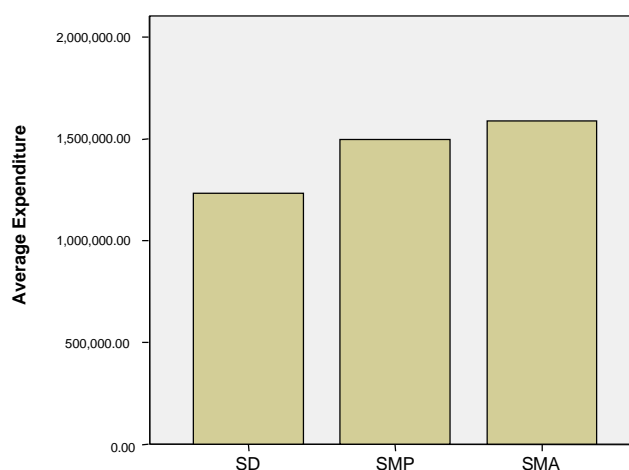


Another way of getting a good picture of the size of the public primary education sector is to express SDN expenditure as a percentage of total APBD. Kabupaten Sukabumi, Kabupaten Lebak, and Kabupaten Indramayu spend slightly over 30% of total APBD on primary education, which is almost the same as expenditure for public works, public health, and other sectors combined.

SMP expenditure is less than 20% of total education sector expenditure for three quarters of the districts. Higher spending is surprisingly found in Kabupaten Enrekang and Kabupaten Aceh Besar, both at 25%. SMA expenditure is less than 10% of total education expenditure for around three quarters of the districts. Expenditure at the SMKN level is around half of expenditure at the SMAN level.

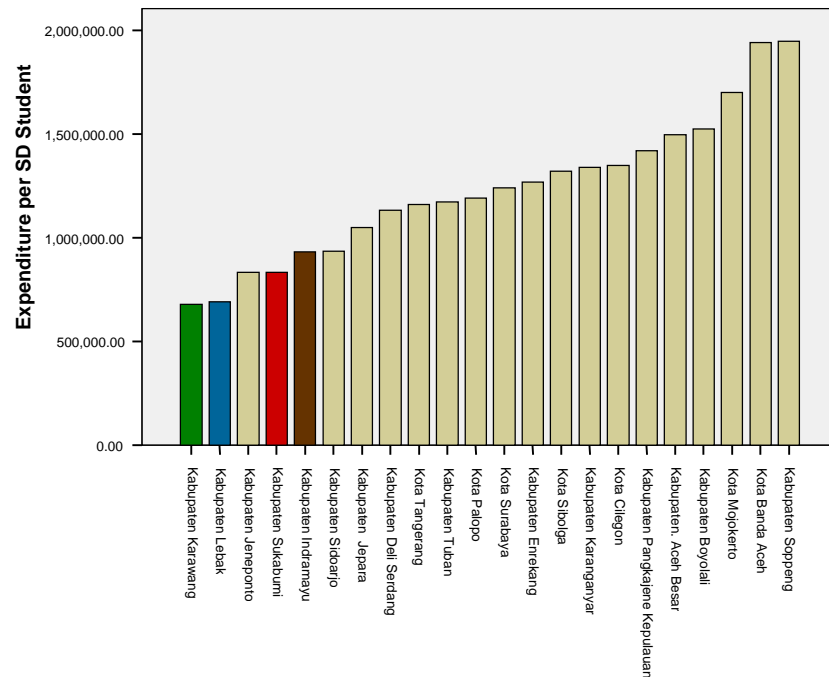
**Per Student Expenditure by Level of Education** . Many financial analysts use the assumption that expenditure per SMPN student should be 1.5 times expenditure per SDN student. The main reason for this is the change from grade teachers at the primary level to subject matter teachers at the junior secondary level. At the senior secondary level, this factor should increase to 2 times expenditure per SDN student.

**Figure 10. Average Expenditure per Student by Level of Education**

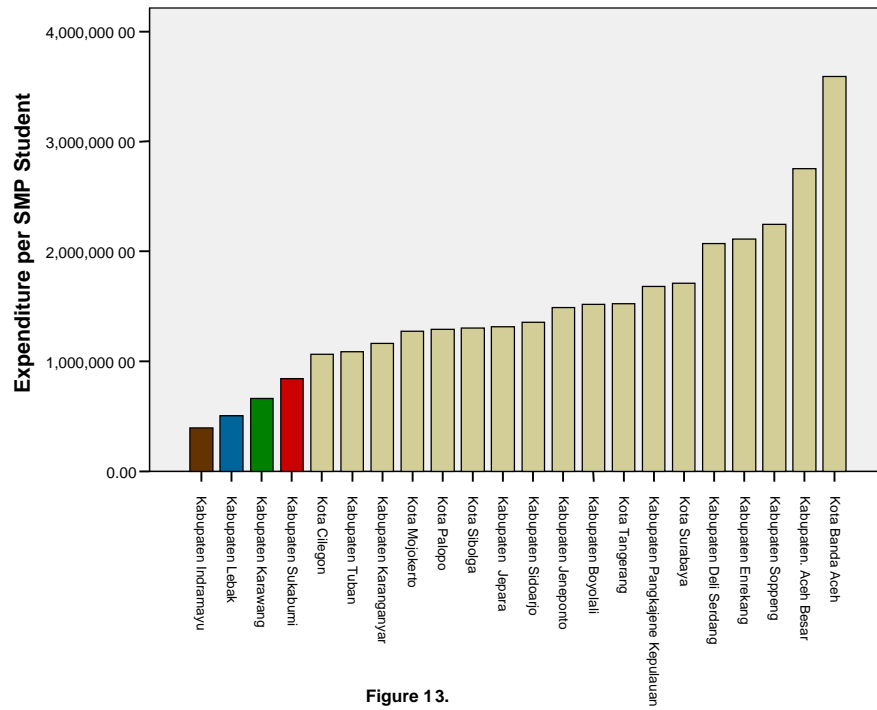


However, Figure 10 shows that the general tendency of higher expenditure at higher levels of education is true for the DEFA districts, but is not as pronounced as expected. Figures 11, 12, and 13 provide information on per -student expenditure for SDN, SMPN, and SMAN respectively.

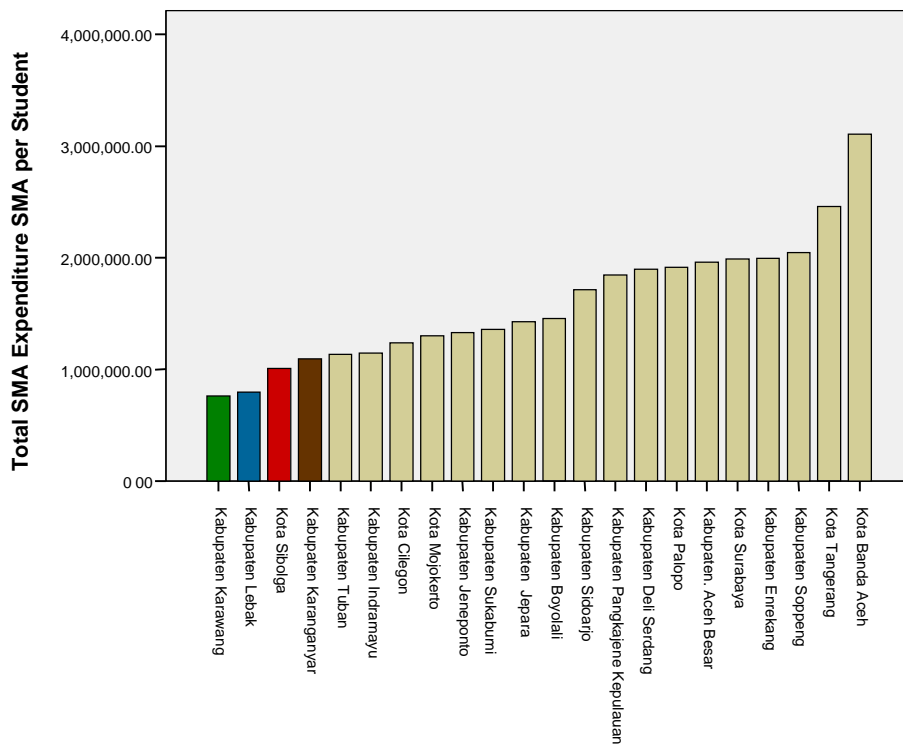
**Figure 11.**  
**Expenditure per SD S tudent by District**



**Figure 12.**  
**Expenditure per SMP Student by District**

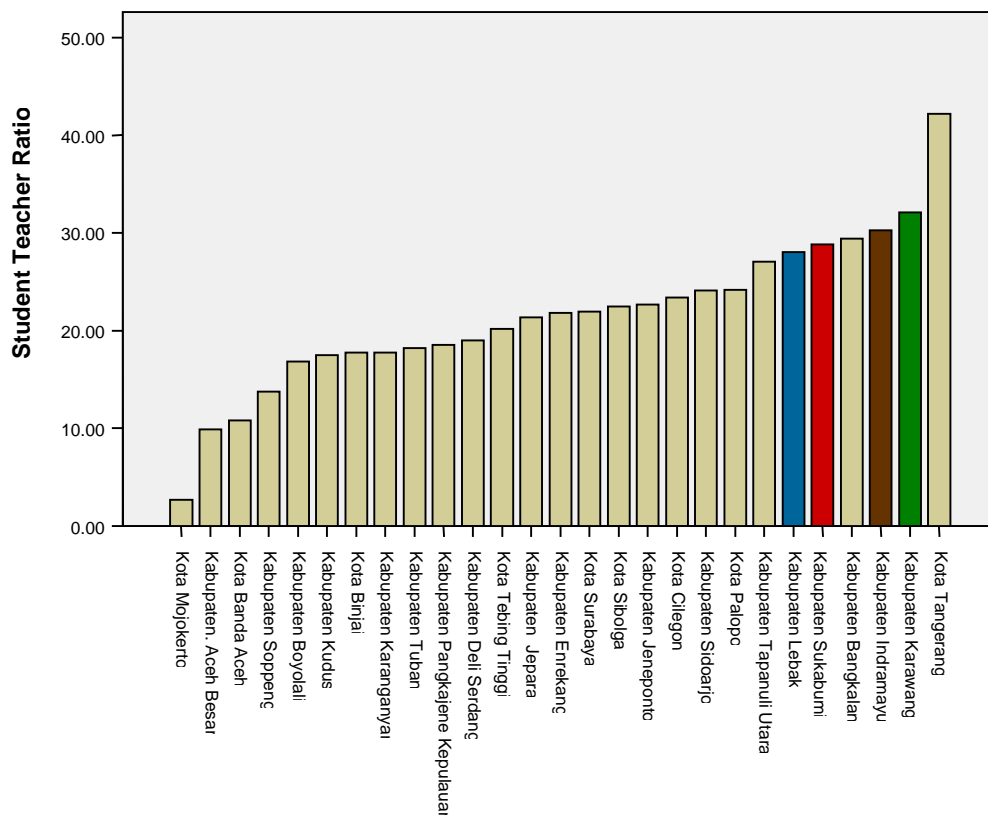


**Figure 13.**  
**Expenditure per SMA Student by District**



Analysis of the data in the figures above shows that the kabupatens with large education systems dominate the left-hand side of the bar chart (low per-student expenditure). This is the case for each level of education. For instance, Kabupaten Karawang has the lowest per student expenditure for both SD and SMA, and second from bottom for SMP. Kabupaten Lebak has the second lowest expenditure per student for each of the three levels of education. Kabupaten Sukabumi and Kabupaten Indramayu also figure domin antly in the left-hand side of the bar chart. These results should provide food for thought; all the more so when realizing that these four districts provide education services for over one million children. It is also important to keep in mind that two out of the four districts (Kabupaten Indramayu and Kabupaten Karawang) allocate 37% of total APBD to the education sector, one district (Kabupaten Lebak) 43%, and one district (Kabupaten Sukabumi) 45%, which means that there are none or only very limited opp ortunities to increase education sector funding. Increasing the efficiency of the education delivery system by increasing STR also does not seem to be a realistic solution, as current STRs for the four districts are already on the high side (see Figure 14) .

**Figure 14**  
**Student Teacher Ratio (STR) by District**



Some additional analyses were conducted to see whether any meaningful correlations could be found between education sector expenditure levels and education performance indicators. The following relations were tested:

- SMP per student expenditure with average national examination results
- SMA per student expenditure with national examination results
- Human Development Index with Education Sector Expenditure.

At this stage no meaningful relations were found; but DBE1 will continue to try to identify patterns and relations that may be useful for decision making at the district, provincial, and national levels.

## 4. Next Steps in DEFA Development

DBE will continue to improve DEFA methodology and its application. Key actions include the following:

**1. Widen DEFA Scope.** In all project provinces further analysis will be conducted on the use of APBD Propinsi and Dana Dekonsentrasi for education development. At the national level, additional information will be collected on fund flows from APBN directly to schools. DBE will also conduct a special study on the use of BOS funds at the school level. The study will be conducted in ten districts (two per province), with a total of 100 SDs and 50 SMP. The study is designed to assess the impact of the BOS program on parental contributions for education. All these efforts combined will result in a complete picture of how education is financed.

**2. Deepen the Analysis.** This will be achieved by further developing the link between financial analysis results and education sector performance indicators. Ultimately, a district should be able to answer the “value for money” question, or what has been achieved by using all the financial resources. All the efforts will result in a District Report Card, which will provide in an easy-to-understand manner the key information on education sector achievements and the use of resources.

**3. Introduce a New DEFA Delivery Model.** The new model will be completely different from the BFS-led model used during the DEFA piloting stage. District staff will be the prime actors under the model, and all the efforts will focus on developing their capacity to analyze district education sector finance. The work plan for 2007 – 2008 has been prepared on the basis of the new plan. Under the new arrangements, it is planned that DBE1 provincial staff will lead workshops for district government staff to compile and analyze data and formulate reports.

**4. Expand Coverage.** DEFA will be conducted in about 21 cohort 2 districts in the period from November 2007 to July 2008, and in approximately 40 cohort 3 districts in the period from November 2008 to December 2009. As the number of data sets will gradually increase, it is envisaged to conduct more detailed analysis of a number of sub-sets, namely kabupaten with small education systems (< 100,000 students), kabupaten with large systems (> 100,000 students), kota with small systems, and kota with large systems. Current analysis results clearly indicate the need for more detailed analyses because of the wide differences between the different education delivery systems.

## 5. Summary of Findings

A number of issues that relate to education policy are brought to light through the DEFA analysis. The following is a summary of the major findings of the present DEFA study:

- ? Although districts are mandated to manage education, the amount of discretionary funds available to them after paying salaries is very small compared with the direct transfers to schools and students by the national government. Hence, education development is largely centrally funded.
- ? Districts on average spend about 80% of education budgets on salaries and 8% on operational costs, leaving only 12% for investment. However, large rural districts spend considerably more on salaries compared with small urban districts, finding it even more difficult to invest in quality improvements. Further, DEFA findings indicate that very few districts are meeting the mandate to provide 20% of government budgets for education, excluding salaries and teacher training.
- ? Districts with relatively small education systems tend to be expensive because of low population density. Further, some small districts are inefficient because they have a surplus of teachers and infrastructure compared to the number of students. More rational recruitment and deployment of teachers, consolidation of small schools, and introducing multi-grade classrooms would increase efficiency in these districts.
- ? The major challenge facing rural districts with large education systems is lack of resources. Because these districts already spend substantially more than 80% of education budgets on salaries, and because they already have high student-teacher ratios and large schools, gains in efficiency cannot be made. Special support from the national government to increase discretionary investment or development funding in these districts should be considered.
- ? Education is by far the largest sector in district government spending. On average, education spending in DEFA districts is more than that for health, public works, and other sectors combined. However, desired quality standards are not being met. Measures to increase efficiency and better targeted central government support are recommended.
- ? Districts spend more on primary education than on secondary education. This results in under-funding for secondary education. Whereas it would be expected that junior and senior secondary per-student expenditures would be respectively 1.5 and 2 times those of primary school expenditure, per-student expenditure for junior and senior secondary in DEFA districts is only about 1.25 and 1.5 times greater than primary.

The findings above highlight the difficult decisions that policy makers face in improving education. DEFA helps in planning and policy development by providing analysis that enables decision makers to identify priority needs and focus scarce funds to meet them.



## Appendix DEFA Methodology

The following describes the steps in conducting District Education Finance Analysis (DEFA) and the outcome of each step in the form of data spreadsheets. DEFA results for Kabupaten Pangkajene Kepulauan (Pangkep) (2005) are used as illustration.<sup>8</sup>

1. Identify APBD revenue by major source, namely District Own Revenue, Fiscal Balance Funds, and Other Revenue.

### Summary of Kabupaten/Kota APBD Revenue (in million of rupiah)

Description	Fiscal Year 2005 (A)		
	Rp	%	
<b>District Own Revenue</b>	<b>27,841</b>	<b>100%</b>	<b>12%</b>
District-collected Tax	16,402	59%	
District-collected Charges	7,073	25%	
Profit from District Enterprises	2,857	10%	
Other District Revenue	1,509	5%	
<b>Fiscal Balance Funds</b>	<b>192,630</b>	<b>100%</b>	<b>82%</b>
Tax & Non-Tax Shared Revenue	11,370	6%	
General Allocation Fund	164,764	86%	
Special Allocation Fund	12,878	7%	
<i>Agriculture Sector</i>	<i>1,130</i>		
<i>Fishery and Maritime Sector</i>	<i>1,200</i>		
<i>Forestry and Plantation Sector</i>	<i>78</i>		
<i>Health Sector</i>	<i>1,750</i>		
<i>Education Sector</i>	<i>4,020</i>		
<i>Civil Works Sector</i>	<i>4,700</i>		
<i>Life Environment Sector</i>	<i>0</i>		
Tax Shared Revenue and Financial Aids from Province	3,618	2%	
<b>Other Revenue</b>	<b>14,176</b>	<b>100%</b>	<b>6%</b>
Aids in Contingency/Balance Funds from Government	14,176	100%	
Emergency Funds	0	0%	
<b>Total Revenue</b>	<b>234,647</b>		<b>100%</b>

Source Data: Amended APBD FY2005

A = Amended

2. Identify major bidang/s sectors (including education sector) in APBD and calculate for each its share of APBD. Small bidang/sectors are grouped together into the category “Other Sectors.” In this step, education bidang/sector expenditure is shown as it is actually stated in the APBD document. This means that education relevant

<sup>8</sup> For FY2005, the APBD (District Revenue and Expenditure Budget) used the accounting/financial format of Minister of Home Affairs decree number 29 of 2002, dated 10 June 2002, concerning “Guidelines on District Finance Management, Accountability, and Monitoring, and Procedures for Development of District Budget (APBD), Implementation of District Finance Administration, and Development of District Budget Calculation.”

expenditure included in other bidang/sectors are not yet included in education sector expenditure.

**Summary of Kabupaten/Kota APBD Expenditure  
by Bidang/Sector (in million of rupiah)**

Description		Fiscal Year 2005 (A)	
		Rp	%
1	Education Bidang	<b>85,562</b>	35%
2	Civil Works Bidang	40,447	16%
3	Health Bidang	23,062	9%
4	Government General Administration Bidang	67,577	27%
5	Other Bidang	30,777	12%
<b>Total Expenditure</b>		247,425	100%

*Source Data: Amended APBD FY2005*

- Identify financing of APBD, which comprises receipts and disbursements. Total receipts over total disbursements might result in surplus or deficit financing.<sup>9</sup>

**Summary Financing Kabupaten/Kota APBD (in million of rupiah)**

Description		Fiscal Year 2005 (A)	
		Rp	%
<b>District Receipts</b>		<b>19,127</b>	<b>100%</b>
Surplus from Last Year's Budget		19,127	100%
Transfer from Reserve Fund		0	0%
Receipts from Loans and Bonds		0	0%
Sales of Separately Managed District Assets		0	0%
<b>District Disbursements</b>		<b>5,672</b>	<b>100%</b>
Transfer to Reserve Fund		0	0%
Capital Participation		5,250	93%
Repayment of Loan Principal Due		412	7%
Payment of Loan Interests and Other Charges		0	0%
Surplus from Current Year's Budget		10	0%
<b>Surplus (Deficit)</b>		<b>13,455</b>	<b>70%</b>

*Source Data: Amended APBD FY2005*

- Calculate actual education sector expenditure. This step involves review of other bidang/sectors' budget documents to identify budget items that are in reality for goods and/or services that bring benefits to the education sector. These additional budget items will increase total education sector expenditure.

<sup>9</sup> This current version of DEFA does not yet include analysis of provincial allocations through the "Dekon" mechanism. The next version, November 2007, will include this analysis.

**Components of Education Sector Expenditure —  
Kabupaten/Kota APBD (in million of rupiah)**

Description	Fiscal Year 2005 (A)	
	Rp	%
<b>Work Units within Education Bidang</b>		
Dinas Pendidikan -without DAK	61,169	
Dinas Pendidikan - DAK	4,020	
Kantor Cabang Dinas Pendidikan	0	
TKN	173	
SDN		
SMPN	12,843	
SMAN	4,514	
SMKN	2,410	
Sanggar Kegiatan Belajar	433	
<i>Total Education Bidang</i>	<b>85,562</b>	100%
<b>Work Units outside Education Bidang</b>		
District Sekretariate	158	
Health Dinas	16	
<i>Total Outside Education Bidang</i>	174	0%
<b>Total Education Sector Expenditure</b>	<b>85,736</b>	100%

5. Breakdown of education sector expenditure into 3 major types of expenditure, namely, Salary Expenditure, Capital Expenditure, and Operational Expenditure. These major classifications are further broken down as follows: Salary Expenditure into Teacher Salary and Non -Teacher Salary; Capital Expenditure into School Capital Expenditure and Non-School Capital Expenditure; and Operational Expenditure into School Operational Expenditure and Non -School Operational Expenditure.

**Breakdown of Education Sector Expenditure from Kabupaten/Kota APBD  
into Salary, Capital, and Operational Expenditures (in million of rupiah)**

Description	Fiscal Year 2005 (A)		
	Rp	%	
Salary Expenditure:	73,465	86%	100%
a. Teachers Salary	65,637		89%
b. Non-Teacher Salary	7,828		11%
Capital Expenditure:	2,060	2%	100%
a. School	1,894		92%
b. Non-School	166		8%
Operational Expenditure:	10,211	12%	100%
a. School	8,839		87%
b. Non-School	1,372		13%
<b>Total Education Sector Expenditure</b>	<b>85,736</b>	100%	

6. Calculate Kabupaten/Kota performance against 20% requirement of Law 20/2003.<sup>10</sup> In this step, total education sector expenditure from Kabupaten/Kota APBD, including and excluding expenditure for teachers' salaries and civil service training, is calculated as share of APBD.

**Share of Education Sector Expenditure in Kabupaten/Kota APBD  
(in million of rupiah)**

Description	Fiscal Year 2005 (A)	
	Rp	%
Total Kab/Kota APBD Expenditure	247,425	100%
Total Education Sector Expenditure (incl. teacher salary)	<b>85,736</b>	35%
Teacher Salary	65,636	27%
Total Education Sector Expenditure (excl. teacher salary)	20,100	8%

7. Breakdown of education sector expenditure on the basis of levels of education/institution, namely TKN (State Kindergarten), SDN (State Primary Schools), SMPN (State Junior High Schools), SMAN (State Senior High Schools), SMKN (State Senior Vocational High Schools), PAUD/PLS (Early Childhood/Out-of-School Education, Youth, Sports, Culture, Dinas Pendidikan & Kantor Cabang Dinas Pendidikan, Other.

**Breakdown of Education Sector Expenditure  
from Kabupaten/Kota APBD by Level (in million of rupiah)**

Description	Fiscal Year 2005 (A)	
	Rp	%
TKN (State Kindergarten)	173	0%
SDN (State Primary Schools)	56,837	66%
SMPN (State Junior High Schools)	13,314	16%
SMAN (State Senior High Schools)	5,046	6%
SMKN (State Senior Vocational High Schools)	2,621	3%
PAUD/PLS (Early Childhood/Out-of-School Education)	53	0%
Youth	125	0%
Sports	58	0%
Culture	35	0%
Dinas Pendidikan & Kantor Cabang Dinas Pendidikan	6,571	8%
Other	903	1%
<b>Total Education Sector Expenditure</b>	<b>85,736</b>	100%

8. Calculate per student expenditure for different levels of education. In this step, expenditure for TKN, SDN, SMPN, SMAN, and SMKN is divided by number of students to get per student expenditure.

<sup>10</sup> Chapter XIII, Article 40, Paragraph 1 of Law 20/2003 requires that funding/financing for education, excluding teacher salary and civil service training, be allocated a minimum of 20% of APBD.

**Education Sector Expenditure from Kabupaten/Kota APBD —  
Per Student (in full rupiah)**

Description	Fiscal Year 2005 (A)	
	No. of Students	Rp/Student
a. TKN	83	2,089,104
b. SDN	40,011	1,420,523
c. SMPN	7,927	1,679,562
d. SMAN	2,736	1,844,236
e. SMKN	1,298	2,019,180

*Number of students for 2005 uses data for school year 2004/2005*

9. Calculate per student Kabupaten/Kota APBD funds channeled in cash to schools to cover school operational expenditure for different levels of education. This step first calculates Kabupaten/Kota APBD funds channeled in cash to schools and then divides the amounts for each level of education by number of students to get per student expenditure.

**School Operational Fund from Kabupaten/Kota APBD —  
Per Student (in full rupiah)**

Description	Fiscal Year 2005 (A)	
	No. of Students	Rp/Student
a. TKN	83	339,759
b. SDN	40,011	188,639
c. SMPN	7,927	82,211
d. SMAN	2,736	102,940
e. SMKN	1,298	157,033

*Number of students for 2005 uses data for school year 2004/2005*

## Abbreviations and Terminology

Abbreviation	Bahasa Indonesia	English Translation and Explanation
APBN	Anggaran Pendapatan dan Belanja Negara	Central (National) Government Budget: Revenue and Expenditure
APBD	Anggaran Pendapatan dan Belanja Daerah	District Revenue and Expenditure Budget
APM	Angka Partisipasi Murni	Net Enrollment Rate (correct age enrollment)
	Bidang Pendidikan	Education Sector (terminology used in APBD)
BFS		DBE Provincial Budget and Finance Specialists
BOS	Bantuan Operasional Sekolah	Operational Grants to Schools (and Madrasah) direct to schools from APBN. Introduced in second half 2005.
Bupati	Bupati Walikota	Bupati is the (elected) head of a Kabupaten; Walikota is the (elected) head of a Kota.
DAU	Dana Alokasi Umum	General Allocation Grants (untied grants from APBN based on criteria such as district financial capacity, poverty and civil servant salaries.
DAK	Dana Alokasi Khusus	Special Purpose Allocations (earmarked grants from APBN)
DASK	Dokumen Anggaran Satuan Kerja	Budget document for each operational (work) unit
DBE		Decentralized Basic Education Project (USAID) DBE1 Management and Governance
DEFA	Analisa Keuangan Pendidikan Kabupaten/Kota	District Education Finance Analysis
Dep.Keu.	Departemen Keuangan	Ministry of Finance (MOF)
FY	Tahun Anggaran	Fiscal Year
GOI		Government of Republic of Indonesia
Kab.	Kabupaten	District (also called Regency)
Kota	Kota	City/Municipality
MI MTs	Madrasah Ibtidaiyah (Negeri) Madrasah Tsanawiyah (Negeri)	Islamic Primary School ( <i>MIN if State owned, i.e. on National Budget</i> ); Islamic Junior Secondary School ( <i>MTsN if State owned, on National Budget</i> )
MOF	Departemen Keuangan	Ministry of Finance
MONE	Departemen Pendidikan Nasional	Ministry of National Education
MORA	Departemen Agama	Ministry of Religious Affairs
PU	Dinas Pekerjaan Umum, Dinas Cipta Karya; Dinas Tata Kota, Dinas Pemukiman dan Pembangunan)	Public Works Department (operates under different names in Kabupaten/Kota APBD) - education sector expenditure (on school construction) may appear under Public Works.
Renstra	Rencana Strategis Satuan Kerja Pemerintah Daerah (Renstra SKPD)	District Strategic Plans
RPS	Rencana Pengembangan Sekolah	School Development Plan
SDN SMPN	Sekolah Daerah Negeri Sekolah Menengah Pertama Negeri	State Primary School ( <i>funded on local Budget</i> ) State Junior Secondary School ( <i>on local Budget</i> )
SIKD	Sistem Informasi Keuangan Daerah	District Finance Information System, within MOF, including APBD planned/realized revenue and expenditure by Kabupaten and Kota
SMAN	Sekolah Menengah Atas Negeri	State Senior Secondary School ( <i>on local Budget</i> )
SMKN	Sekolah Menengah Kejuruan Negeri	State Senior Secondary Vocational School ( <i>on local Budget</i> )
TK	Taman Kanakanak	Kindergarten ( <i>majority are private</i> )
US	Ujian Sekolah	School-based Grade 6 examination
UU	Undang-Undang	Law

